WHAT IS CLAIMED IS:

1. A method for optical transmission adopting dispersion compensation, comprising the steps of:

(a) providing an optical fiber transmission line composed of a plurality of segments each having a length falling within a predetermined range;

(b) providing an optical transmitter for supplying an optical signal to said optical fiber transmission line at one end of said optical fiber transmission line;

(c) providing an optical receiver for receiving said optical signal from said optical fiber transmission line at the other end of said optical fiber transmission line;

(d) providing an optical amplifier between any two adjacent ones of said segments; and

(e) providing a dispersion compensator in association with each of said optical transmitter, said optical receiver, and said optical amplifier;

said dispersion compensator providing a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range.

2. A method according to claim 1, wherein each of said segments is formed from a single-mode fiber having a zero-dispersion wavelength of about 1.3 μm.

3. A method according to claim 1, wherein said optical signal has a wavelength of about 1.55 μm.

4. A method according to claim 1, wherein said optical signal comprises a plurality of optical signals having different wavelengths obtained by wavelength division multiplexing.

5. A method for optical transmission adopting dispersion compensation, comprising the steps of:

(a) providing an optical fiber transmission line including at least one first segment formed from a single-mode fiber and at least one second segment formed from a dispersion shifted fiber;

(b) providing an optical transmitter for supplying an optical signal to said optical fiber transmission line at one end of said optical fiber transmission line;

(c) providing an optical receiver for receiving said optical signal from said optical fiber transmission line at the other end of said optical fiber transmission line;

(d) providing an optical amplifier between any two adjacent ones of said segments; and

(e) providing a dispersion compensator in association with each of said optical transmitter, said optical receiver, and said optical amplifier except that

corresponding to at least one end of said second segment.

6. A method according to claim 5, wherein said single-mode fiber has a zero-dispersion wavelength of about 1.3 μm, and said dispersion shifted fiber has a zero-dispersion wavelength of about 1.55 μm.

7. A method according to claim 5, wherein said optical signal has a wavelength of about 1.55 μm.

8. A method according to claim 5, wherein said optical signal comprises a plurality of optical signals having different wavelengths obtained by wavelength division multiplexing.

9. A system for optical transmission adopting dispersion compensation, comprising:

an optical fiber transmission line composed of a plurality of segments each having a length falling within a predetermined range;

an optical transmitter for supplying an optical signal to said optical fiber transmission line from one end thereof;

an optical receiver for receiving said optical signal from the other end of said optical fiber transmission line;

an optical amplifier provided between any two adjacent ones of said segments; and

a dispersion compensator provided in association with each of said optical transmitter, said optical receiver, and said optical amplifier;

said dispersion compensator providing a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range.

10. A system according to claim 9, wherein each of said segments is formed from a single-mode fiber having a zero-dispersion wavelength of about 1.3 μm.

11. A system according to claim 9, wherein said optical signal has a wavelength of about 1.55 μm.

12. A system according to claim 9, wherein:

said optical transmitter comprises an E/O converter for converting an electrical signal into said optical signal, and a postamplifier for amplifying said optical signal;

said dispersion compensator being provided between said E/O converter and said postamplifier.

13. A system according to claim 9, wherein:

said optical amplifier comprises a front-stage amplifier and a rear-stage amplifier cascaded with each other;

said dispersion compensator being provided between said front-stage amplifier and said rear-stage amplifier.

14. A system according to claim 9, wherein:

said optical receiver comprises a preamplifier for amplifying said optical signal, and an O/E converter for converting said optical signal into an electrical signal; said dispersion compensator being provided between said preamplifier and said O/E converter.

15. A system according to claim 9, wherein:

said optical transmitter comprises a plurality of E/O converters each for converting an electrical signal into said optical signal, a front-stage amplifier and a rear-stage amplifier cascaded with each other, and an optical multiplexer having a plurality of input ports respectively connected to said plurality of E/O converters and an output port connected to said front-stage amplifier;

said dispersion compensator being provided between said front-stage amplifier and said rear-stage amplifier.

16. A system according to claim 9, wherein:

said optical receiver comprises a front-stage amplifier and a rear-stage amplifier cascaded with each other, a plurality of O/E converters each for converting said optical signal into an electrical signal, and an optical demultiplexer having an input port connected to said rear-stage amplifier and a plurality of output ports

respectively connected to said plurality of O/E converters;

said dispersion compensator being provided between said front-stage amplifier and said rear-stage amplifier.

17. A system for optical transmission adopting dispersion compensation, comprising:

an optical fiber transmission line including at least one first segment formed from a single-mode fiber and at least one second segment formed from a dispersion shifted fiber;

an optical transmitter for supplying an optical signal to said optical fiber transmission line from one end thereof;

an optical receiver for receiving said optical signal from the other end of said optical fiber transmission line;

an optical amplifier provided between any two adjacent ones of said segments; and

a dispersion compensator provided in association with each of said optical transmitter, said optical receiver and said optical amplifier except that corresponding to at least one end of said second segment.

18. A system according to claim 17, wherein said first segment has a zero-dispersion wavelength of about

1.3 μm, and said second segment has a zero-dispersion wavelength of about 1.55 μm.

19. A system according to claim 17, wherein said optical signal has a wavelength of about 1.55 μm.

20. A system according to claim 17, wherein:

said optical transmitter comprises an E/O converter for converting an electrical signal into said optical signal, and a postamplifier for amplifying said optical signal;

said dispersion compensator being provided between said E/O converter and said postamplifier.

21. A system according to claim 17, wherein:

said optical amplifier comprises a front-stage amplifier and a rear-stage amplifier cascaded with each other;

said dispersion compensator being provided between said front-stage amplifier and said rear-stage amplifier.

22. A system according to claim 17, wherein:

said optical receiver comprises a preamplifier for amplifying said optical signal, and an O/E converter for converting said optical signal into an electrical signal;

said dispersion compensator being provided between said preamplifier and said O/E converter.

23. A system according to claim 17, wherein:

said optical transmitter comprises a plurality of E/O converters each for converting an electrical signal into said optical signal, a front-stage amplifier and a rear-stage amplifier cascaded with each other, and an optical multiplexer having a plurality of input ports respectively connected to said plurality of E/O converters and an output port connected to said front-stage amplifier;

said dispersion compensator being provided between said front-stage amplifier and said rear-stage amplifier.

24. A system according to claim 17, wherein:

said optical receiver comprises a front-stage amplifier and a rear-stage amplifier cascaded with each other, a plurality of O/E converters each for converting said optical signal into an electrical signal, and an optical demultiplexer having an input port connected to said rear-stage amplifier and a plurality of output ports respectively connected to said plurality of O/E converters;

said dispersion compensator being provided between said front-stage amplifier and said rear-stage amplifier.

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